We Claim:

1. A light-sensitive user input device comprising:

a co-planar array of light-sensitive devices disposed to sense light transmitted through an input surface of the input device, nearest adjacent light-sensitive devices having a center-to-center spacing of no more than a maximum distance;

a stylus configured to emit a light beam detectable by the devices, the light beam exhibiting a cross-sectional profile having a known shape characterized by an intensity variance across the beam profile, wherein the light beam exhibits a size at the plane of the devices that is greater than the maximum distance when the stylus is contacting the input surface; and

electronics coupled to the light-sensitive devices and configured to determine the position of the light beam to within a spacing that is less than the maximum distance.

2. The user input device of claim 1, wherein the electronics are configured to determine the position of the light beam using interpolation methods based on the known intensity variance of the cross-sectional profile of the light beam.

3. The user input device of claim 1, wherein the cross-sectional profile of the light beam has a circular shape, and the detectable size is the diameter of the circular shape.

4. The user input device of claim 1, wherein the cross-sectional profile of the light beam has an elliptical shape, and the detectable size is an axis of the elliptical shape.

5. The user input device of claim 1, wherein the known intensity variance comprises a beam intensity that is highest at the beam center and that continuously trails off to zero intensity away from the beam center.

6. The user input device of claim 1, wherein the known intensity variance comprises an annular beam intensity profile that increases in intensity from the center of the beam to a maximum intensity away from the beam center and then trails off to zero intensity with further distance away from the beam center.

7. The user input device of claim 1, wherein the electronics are further configured to determine beam angle.

8. The user input device of claim 7, wherein the beam angle is determined by comparing a measured shape of the beam as detected by the light-sensitive devices to the known shape of the beam.

9. The user input device of claim 1, wherein the electronics are further configured to detect stylus tilt direction.

10. The user input device of claim 9, wherein the stylus tilt is determined by detecting a shadow cast on the devices attributable to the stylus or an object holding the stylus.

11. A method of determining the position of a light beam at an input surface, comprising:

providing a co-planar array of light-sensitive devices disposed to sense light transmitted through the input surface;

emitting the light beam with a known shape characterized by a cross-sectional profile having a known intensity variance, the light beam having a spot size sufficient for the light beam to be detected by at least two of the light-sensitive devices when the light beam is directed through the input surface;

detecting the light beam by at least two of the light-sensitive devices; and

determining the position of the light beam to an accuracy that is less than the center-to-center distance between nearest adjacent light-sensitive devices by interpolating

signals measured during the detecting step using the known intensity variance of the light beam.

12. The method of claim 11, further comprising the step of determining beam angle from comparing a detected light beam shape to the known shape.

13. The method of claim 12, further comprising the step of determining beam tilt orientation by using the light-sensitive devices to detect a reduced light intensity that is attributable to a shadow cast by a device emitting the light beam or by an object holding the device emitting the light beam.